CLAIMS

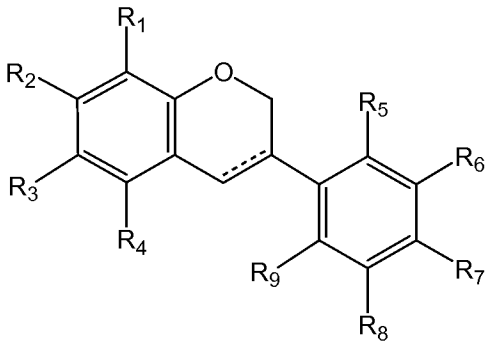
1. A method of preparing isoflavan or isoflavene derivatives of Formula 1, comprising,

a preparation step 1 of synthesizing a compound of Formula 4 by condensing a compound of Formula 2 and a compound of Formula 3 in a base;

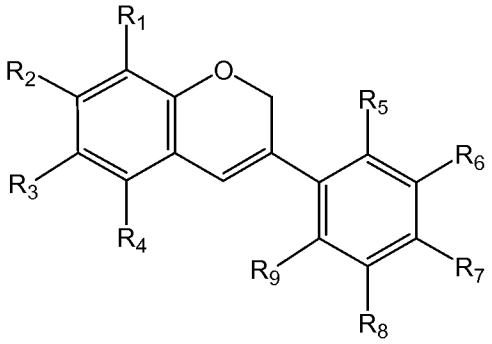
a preparation step 2 of synthesizing of a compound of Formula 5, including Formula 5a and Formula 5b, by reducing a compound of Formula 4; and

a preparation step 3 of synthesizing a compound of Formula 1 including Formula 1a and Formula 1b, by etherizing the compound of Formula 5.

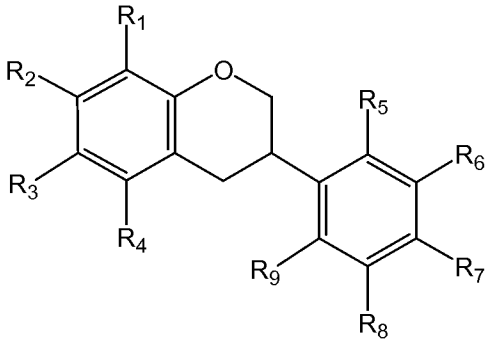
<Formula 1>



<Formula 1a>



<Formula 1b>



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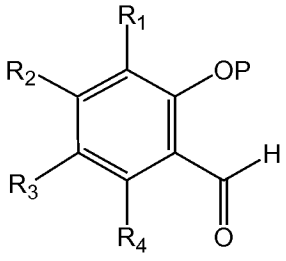

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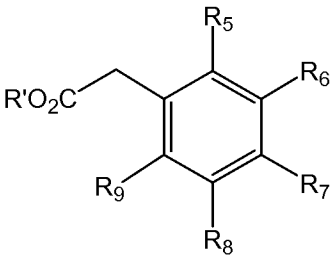
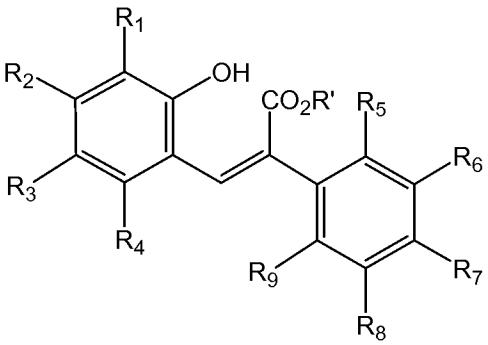
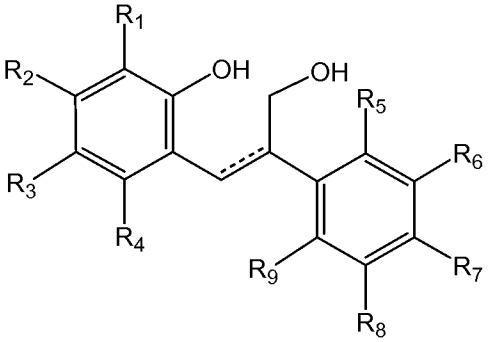


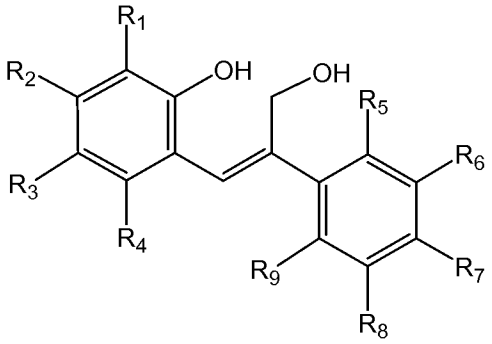
<Formula 4>



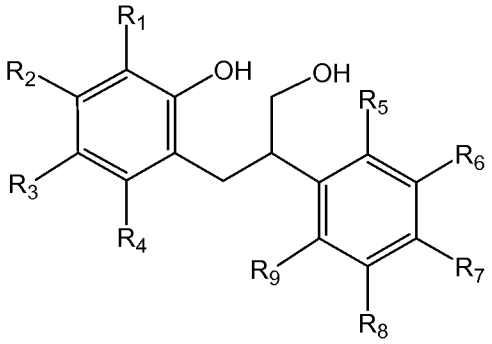
<Formula 5>



<Formula 5a>



<Formula 5b>



In the Formulas 1 to 5, substituents of R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8 and R_9 are independent of each others and represent a hydrogen, a hydroxy, a halogen, a straight or branched alkyl group, an alkenyl group, a haloalkyl group, an alkoxy group, an alkoxyalkyl group, an alkyloxy group, an alkynyloxy group, an alkylcarbonyloxy group, an alkenylcarbonyloxy group, or an alkynylcarbonyloxy group having from 1 to 10 carbon atoms, an amine group having a general Formula of $NR_{10}R_{11}$, an amide group having a general Formula of $R_{10}NCOR_{11}$, a nitro group, a cyano group, an alkylthio group, an akenylthio group and an alkynylthio group having from 1 to 20 carbons, a phenyl group, a substituted phenyl group, a benzyl

group, and a substituted benzyl group;

In the groups of R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8 and R_9, any two adjacent substituents are interlinked through $-OCH_2O-$, $-SCH_2S-$, $-OCO_2-$, $-OCH_2CH_2O-$, $-OCH_2S-$, $-OCH_2CH_2-$, $-OCH_2CH_2CH_2-$, $-OCH_2CH=CH-$, $-OCMe_2CH_2CH_2-$, $-OCMe_2CH=CH-$, $-SCH_2CH_2S-$, $-SCH_2CH_2-$, $-SCH_2CH_2CH_2-$, $-SCH_2CH=CH-$, $-SCMe_2CH_2CH_2-$, $-SCMe_2CH_2CH_2-$, $-SCMe_2CH=CH-$, a fused benzene ring, a furan ring, an indole ring, or a pyridin ring.

The substitituents of R', R_{10} or R_{11} of the Formula 3 represent an alkyl group, an alkenyl group, an alkynyl group, an haloalkyl group, or an alkoxyalkyl group having 1 to 20 carbons.

2. The method of claim 1, wherein the protected o-hydroxybenzaldehyde compound of the Formula 2 is a compound protected using one selected from the group consisting of benzoyl chloride, pivaloyl chloride, methoxycarbonyl chloride, and trimethylsilyl chloride.

3. The method of any one of claims 1 and 2, wherein a base of the preparation step 1 is one selected from the group consisting of Lithium Diisopropylamide (LDA), $NaNH_2$, and KO^tBu.

4. The method of claim 3, wherein a reaction temperature is below about 0 ℃.

5. The method of claim 1, wherein a reducing agent of the preparation step 2 is one selected from the group consisting of DIBAL, KBH (CHMeEt), $LiBH(CHMeEt)_3$, $NaAlH_2(OCH_2CH_2OMe)_2$, and $LiAlH_2(OEt)_2$ to give a compound of the Formula 5a by reducing only the ester group of the α-phenyl-cinnamate compound of the Formula 4 for synthesizing the compound of the Formula 1a.

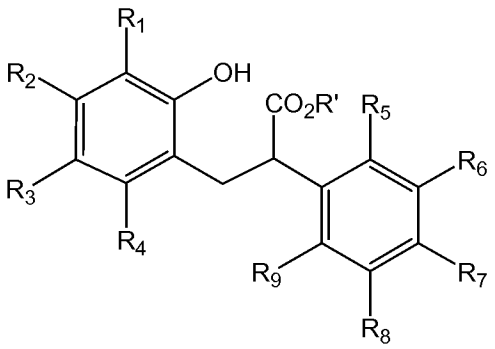
6. The method of claim 5, wherein the reduction of the compound of the Formula 5a to a compound of the Formula 5b is hydrogenation catalyzed by one selected from the group consisting of Nickel, Palladium, Platinum, Ruthenium and Rhodium for synthesizing the compound of the Formula 1b.

7. The method of claim 1, wherein a reducing agent of the preparation step 2 is one selected from the group consisting of $LiAlH_4$, $NaAlH_4$, $LiBH_4$, and $LiBEt_3$ to give the compound of the Formula 5b by reducing both the ester group and the olefinic double bond of an α-phenyl-cinnamate compound of the Formula 4 for synthesizing the compound of the Formula 1b.

8. The method of claim 1, wherein the reduction of the olefinic double bond of the compound of Formula 4 in the preparation step 2 is carried out by using a double bond reducing agent of one selected from the group consisting of $NaBH_4$ and $LiBH_4$ in a condition with a Lewis acid catalyst, or by hydrogenating with one selected from the group consisting of Nickel, Palladium, Platinum, Ruthenium, and Rhodium

as a catalyst to give a compound of Formula 6, and then an ester group of the Formula 4 is reduced using a reducing agent selected from the group consisting of $LiAlH_4$, $NaAlH_4$, $LiBH_4$, and $LiBEt_3$ to give the compound of the Formula 5b for synthesizing the compound of the Formula 1b.

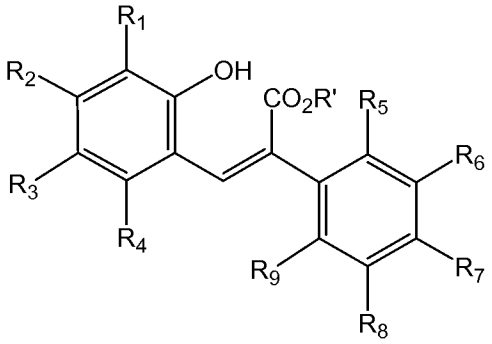
<Chemical Formula 6>



wherein, substituents of R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8 and R_9 are as defined in claim 1.

9. A compound of the Formula 4, wherein substituents of R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9 and R' are as defined in claim 1.

<Chemical Formula 4>



10. A compound of the Formula 5, wherein substituents of R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9 and R' are as defined in claim 1.

<Chemical Formula 5>